

REMARKS/ARGUMENTS

The Applicants originally submitted Claims 1-28 in the application. The Examiner has indicated that Claims 15-28 are allowable. The Applicants believe the remaining Claims are also allowable. Thus, in the present response, the Applicants have not amended, canceled or added any claims. Accordingly, Claims 1-28 are currently pending in the application.

I. Rejection of Claims 1-4 and 7 under 35 U.S.C. §103

The Examiner has rejected Claims 1-4 and 7 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,970,137 to Le Damany, *et al.* (Le Damany) in view of U.S. Patent No. 5,926,505 to Long. The Applicants respectfully disagree since Le Damany and Long do not teach or suggest an echo canceling system including a slave echo canceling stage configured to employ a filter coefficient to attenuate an echo and a separation circuit coupled to the slave echo canceling stage and configured to generate data representing a residual echo substantially exclusive of the receive signal, and a master echo canceling stage coupled to the separation circuit and configured to receive the data and modify the filter coefficient based on the receive data. (Claim 1).

The Examiner asserts that Le Damany teaches each element of the independent Claim 1 except the details of the separation circuit. (Examiner's Action, page 2). Le Damany does not teach or suggest, however, a separation circuit coupled to a master and slave echo canceling stage that generates data representing a residual echo substantially exclusive of a receive signal as recited in independent Claim 1. On the contrary, Le Damany teaches acoustic and electric echo cancellers that are not the master and slave echo canceling stages as recited in Claim 1 but are cancellers designed to independently remove an acoustic echo or an electric echo. (Column 6, lines 8-38). Additionally,

Le Damany does not teach a separation circuit coupled to the canceling stages as recited in Claim 1 but instead teaches a controlling processor coupled to the acoustic and electric echo cancellers. (Column 5, lines 33-38 and Figure 1). Furthermore, Le Damany is silent regarding generating data representing a residual echo substantially exclusive of a receive signal as recited in Claim 1. Le Damany simply mentions an algorithm used by the electric echo canceller to attenuate a residual echo in a transmit channel that may be perceived by a remote user. (Column 8, lines 56-60). Thus, Le Damany does not teach or suggest each element of independent Claim 1 for which it was cited.

Long is directed to high speed modem communication utilizing two-step mapping techniques. (Column 1, lines 7-9). The Examiner does not cite Long to cure the deficiencies of Le Damany but to teach details of the separation circuit. More specifically, the Examiner cites Long to teach an equalizer/slicer stage. (Examiner's Action, page 3). The equalizer/slicer of Long, however, does not generate data representing a residual echo substantially exclusive of a receive signal as recited in independent Claim 1. On the contrary, the equalizer of Long is used to match the linearly-quantized signal from a local central office. (Column 8, lines 25-29). Thus, Long does not teach or suggest each element of independent Claim 1 for which it was cited.

Since the Examiner's cited combination of Le Damany and Long does not teach or suggest each and every element of independent Claim 1, the Examiner has not provided a *prima facie* case of obviousness of Claim 1 and Claims dependent thereon. Accordingly, Claim 1 and Claims dependent thereon are not unpatentable over Le Damany in view of Long. Thus, the Applicants respectfully request the Examiner to withdraw the 35 U.S.C. §103(a) rejection of Claims 1-4 and 7 and issue allowance thereof.

II. Rejection of Claims 2 and 5 under 35 U.S.C. §103

The Examiner has rejected Claims 2 and 5 under 35 U.S.C. §103(a) as being unpatentable over Le Damany in view of Long and in further view of U.S. Patent No. 5,610,909 to Shaw. The Applicants respectfully disagree.

As discussed above, the cited combination of Le Damany and Long does not teach or suggest each and every element of independent Claim 1. Shaw has not been cited to cure the deficiencies of Le Damany and Long but to teach a delay means associated with a first and second echo cancellation stage. (Examiner's Action, page 3). Thus, the cited combination of Le Damany, Long and Shaw does not teach or suggest each and every element of independent Claim 1.

Since the Examiner's combination of Le Damany, Long and Shaw does not teach or suggest each and every element of independent Claim 1, the Examiner has not provided a *prima facie* case of obviousness of Claim 1 and Claims 2 and 5 which depend thereon. Accordingly, Claims 2 and 5 are not unpatentable over Le Damany in view of Long and Shaw. Thus, the Applicants respectfully request the Examiner to withdraw the 35 U.S.C. §103(a) rejection of Claims 2 and 5 and issue allowance thereof.

III. Rejection of Claim 6 under 35 U.S.C. §103

The Examiner has rejected Claim 6 under 35 U.S.C. §103(a) as being unpatentable over Le Damany in view of Long and in further view of U.S. Patent No. 5,631,899 to Duttweiler. The Applicants respectfully disagree.

As discussed above, the cited combination of Le Damany and Long does not teach or suggest each and every element of independent Claim 1. Duttweiler has not been cited to cure the

deficiencies of Le Damany and Long but has simply been cited to teach finite impulse response filters and infinite impulse response filters. (Examiner's Action, page 4). Thus, the cited combination of Le Damany, Long and Duttweiler does not teach or suggest each and every element of independent Claim 1.

Since the Examiner's combination of Le Damany, Long and Duttweiler does not teach or suggest each and every element of independent Claim 1, the Examiner has not provided a *prima facie* case of obviousness of Claim 1 and Claim 6 which depends thereon. Accordingly, Claim 6 is not unpatentable over Le Damany in view of Long and Duttweiler. Thus, the Applicants respectfully request the Examiner to withdraw the 35 U.S.C. §103(a) rejection of Claim 6 and issue allowance thereof.

IV. Rejection of Claims 8-13 under 35 U.S.C. §103

The Examiner has rejected Claims 8-13 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,532,289 to Magid in view of U.S. Patent No. 6,597,787 to Lindgren, *et al.* (Lindgren) or Le Damany. The Applicants respectfully disagree since the cited combination of Magid and Lindgren or Le Damany does not teach or suggest a method of attenuating an echo in a receive signal propagating along the receive path including generating data representing a residual echo substantially exclusive of the receive signal and receiving the data and modifying a filter coefficient based thereon as recited in independent Claim 8.

Magid is directed to an echo canceling device which avoids switching artifacts by employing a residual echo suppressor to suppress a residual echo by the amount needed to make it unnoticeable. (Column 1, line 66 to Column 2, line 21). The estimation of the residual echo level in Magid,

however, is not employed to modify a filter coefficient to attenuate an echo in a receive signal as recited in independent Claim 8. Instead, the estimation of the residual echo level is employed in the residual echo suppressing unit 20 to reduce switching artifacts in the processed signal. The echo canceller of Magid uses the residual echo signal provided by the output of a subtractor instead of a generated estimate to adapt coefficients to remove the echo signal. (Column 2, lines 37-47). Thus, Magid does not teach or suggest each and every element of Claim 8 for which it was cited.

Lingred is directed to an echo cancellation device intended to eliminate so-called residual echoes in a transmitting path which remain in an output of a conventional echo canceller after main echo cancellation has been carried out. (Column 1, lines 20-24). The Examiner does not cite Lingred to cure the deficiencies of Magid but to teach finite impulse response filters and infinite impulse response filters. (Examiner's Action, page 4). Additionally, Le Damany has not been cited to cure the deficiencies of Magid but has also been cited to finite impulse response filters and infinite impulse response filters. (Examiner's Action, page 5). Thus, the cited combination of Magid, Lingred or Le Damany does not teach or suggest each and every element of independent Claim 8 for which it was cited.

Since the Examiner's combination of Magid, Lingred or Le Damany does not teach or suggest each and every element of independent Claim 8, the Examiner has not provided a *prima facie* case of obviousness of Claim 8 and Claims dependent thereon. Accordingly, Claims 8-13 are not unpatentable over Magid in view of Lingred or Le Damany. Thus, the Applicants respectfully request the Examiner to withdraw the 35 U.S.C. §103(a) rejection of Claims 8-13 and issue allowance thereof.

V. Rejection of Claim 14 under 35 U.S.C. §103

The Examiner has rejected Claim 14 under 35 U.S.C. §103(a) as being unpatentable over Magid in view of Lindgren or Le Damany and in further view of Duttweiler. The Applicants respectfully disagree.

As discussed above, the cited combination of Magid and Lindgren or Le Damany does not teach or suggest each and every element of independent Claim 8. Duttweiler has not been cited to cure the deficiencies of Magid and Lindgren or Le Damany but has simply been cited to teach finite impulse response filters and infinite impulse response filters. (Examiner's Action, page 5). Thus, the cited combination of Magid, Lindgren or Le Damany, and Duttweiler does not teach or suggest each and every element of independent Claim 8 and Claim 14 which depends thereon.

Since the cited combination of Magid, Lindgren or Le Damany, and Duttweiler, individually or in combination, do not teach or suggest each and every element of independent Claim 8, the Examiner has not provided a *prima facie* case of obviousness of Claim 8 and Claim 14 which depends thereon. Accordingly, Claim 14 is not unpatentable over Magid in view of Lindgren or Le Damany and Duttweiler. Thus, the Applicants respectfully request the Examiner to withdraw the 35 U.S.C. §103(a) rejection of Claim 14 and issue allowance thereof.

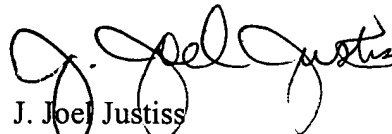
VI. Conclusion

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-28.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

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